Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

CAT AREA
CITGO Petroleum Corporation
Lake Charles, Calcasieu Parish, Louisiana
Agency Interest Number: 1250
Activity Number: PER20050022
Draft Permit -2908-V1

I. APPLICANT:

Company:
CITGO Petroleum Corporation
P. O. Box 1562
Lake Charles, Louisiana 70602

Facility:
CAT Area
4401 Hwy. 108 S, Lake Charles, Calcasieu Parish, Louisiana
Approximate UTM coordinates are 468.50 kilometers East and 3338.50 kilometers North, Zone 15

II. FACILITY AND CURRENT PERMIT STATUS:

CITGO Petroleum Corporation operates a petroleum refinery in Lake Charles, Louisiana. The Lake Charles Manufacturing Complex (LCMC) processes both domestic and foreign crude oils into sulfuric acid, benzene, propane, ethane, sulfur, gasoline, distillate and residual oil, propylene, coke, lube oils and other miscellaneous products. The CAT Area includes the Fluidized Catalytic Cracking Units, the Hydrotreating Units, the Fuel Gas Processing Unit, the Propylene Fractionation Unit, and the C4 Recovery Unit. Currently the facility operates under Permit 2908-V0 dated April 28, 2005. This permit includes the Cat Gasoline Hydrotreaters Unit permitted under Permit 2810-V1 dated May 4, 2005. Due to the Permit No. 2810-V1 under renewal status, public notice is required for this consolidated permit.

In addition, the facility has several state permits that will remain effective until replaced by a Part 70 permit. These include:

Permit #	Units or Sources	Date Issued
254	Fuel Oil Conversion (1.0% Sulfur)	12/18/73
310	LDPE Expansion	May 1974
311	Reactivation of Deasphalting Unit	5/2/74

Permit #	Units or Sources	Date Issued
254	Fuel Oil Conversion (1.0% Sulfur)	12/18/73
310	LDPE Expansion	May 1974
311	Reactivation of Deasphalting Unit	5/2/74
344	Construction of 2 Sulfur Recovery Units with Tail Gas Cleanup and DC/DA	7/18/74
456	LDPE Expansion	May 1975
737	Modification-"D" Topping Unit	5/20/77
796	Polyethylene Plant Expansion	9/7/77
900(M-1)	H-Oil Unit Conversion to B Light Cycle Oil Hydrotreater	10/28/01
1168R	New "C" Reformer and Refinery Mod.	8/10/79
1594	New Coker, Unicracker, and Refinery Modification	7/27/81
1770T	Use TAC monitoring sites (alter permit 254)	9/22/82
0520-00016-01	ENCON I Project	11/10/88
2003(M-1)	Isomerization Unit	2/21/01
2076	Sour Water Stripping Unit	5/26/91
2095	C-4 Debutanizer Tower	9/18/91
2111	Tert Amyl Methyl Ether Unit	1/14/92
2112	A & B SRU and TG-II	1/14/92
2131	C Reformer Benzene Recovery	4/20/92
2160	Butane Handling	9/23/92
2173	Inert Gas Handling	1/4/93
2215	Sour Water Surge Tank (CIT-CON)	9/14/93
2308 (M-1)	Cat Feed Hydrotreater	2/26/01
2348	B FCCU Unit Project	10/13/95
2381	C3 Mix Handling Project	3/25/96
2403	MEK Solvent Dehydration	8/10/96
2416	C FCCU Unit Project	7/29/96
2522	A FCCU Unit Project	3/17/98
2595	C Topper/Straight Run PPR	2/12/99

Permit #	Units or Sources	Date Issued
2811	B Cat B-2 Furnace Project	8/8/02
2615(M-1)	C Reformer Optimization Project	10/24/01
2765	Treating Unit – Kerosene	11/26/01
2204	Steam Enhancement Project	4/22/93

Several Part 70 permits addressing portions of the facility have already been issued. These include:

Permit #	Units or Sources	Date Issued
2715-V0	Mixed Xylenes Unit	12/10/01
2714-V1	Coker I Unit	7/29/03
2796-V1	Logistics Area	3/28/03
2797-V0	CVEP	9/9/02
2810-V1	Tier 2	5/4/05

III. PROPOSED PERMIT / PROJECT INFORMATION:

Proposed Permit

The Department originated a permit modification to incorporate stack testing requirements on two (2) furnaces and consolidate this permit with the Cat Gasoline Hydrotreaters Unit, Permit 2810-V1. A permit application and Emission Inventory Questionnaire (EIQ) dated February 23, 2006 were received, requesting a Part 70 operating permit renewal/modification.

A notice requesting public comment on the permit was published in the *Advocate*, Baton Rouge, Louisiana, on XXX XX, 2006 and *The Southwest Daily News*. The public notice was sent to persons included in the Office of Environmental Services Public Notice Mailing List on XXX XX, 2006. The proposed permit was also submitted to US EPA Region VI.

Project description

The CAT Area includes the Fluidized Catalytic Cracking Units, two (2) Hydrotreating Units, the C4 Recovery Unit, the Propylene Fractionation Unit, and the Fuel Gas Processing Unit. The Cat Gasoline Hydrotreaters Unit (CGH) consists of two (2) units.

The Fluidized Catalytic Cracking Units

The Fluidized Catalytic Cracking Units consist of the A, B and C Units. The Fluidized Catalytic Cracking Units (FCCU) convert the heavy distillate gas oils and heavier cuts into higher grade, more valuable lighter fractions. The FCC Units provide a significant portion of the gasoline produced in the gasoline pool.

The FCC Units are located downstream of the Cat Feed Hydrotreater, the atmospheric and vacuum distillation towers and the coking units. Thus, the feedstocks that are available to the FCC are feeds from these units. The primary liquid products produced in the FCC Unit are:

- Liquefied Petroleum Gases (LPG)
- C3, C4, and C5 Olefins
- Gasoline Distillate
- Light and Heavy Cycle Oil
- Decant oil

These products are then sent downstream for further processing and separation at the C4 Gas Recovery Plant, FCC Gasoline Hydrotreater(s), the Hydrotreater for No. 2 Fuel Oil or for feed to the Unicracker.

The unit conversion is dependent on the type of feed and catalyst life. When a unit is down or on turnaround; the other two units are operated to compensate for the down unit. Catalyst type and formulation will change depending on refinery objectives and economics provided that the units operate within the permitted emission limits.

The FCC Unit consists of three (3) major sections: a) Reactor, b) Fractionation, and c) Regenerator Flue Gas Handling.

Reactor

The feed is preheated through a heat exchange network and preheat furnace and contacted with a stream of hot circulating catalyst, which completely vaporizes the feed. The mixture is separated into the catalyst and cracked hydrocarbons by the use of cyclones and steam. The vapor stream is quenched to minimize over-cracking.

Fractionation

The reactor effluent is fed into the base of the fractionator. With heat removal at various stages, the vapors are condensed and fractionated into product streams. The overhead cut consists of gasoline distillate and lighter ends and is sent to C4 Recovery for further separation. The two side-cut streams are light cycle oil (LCO) and heavy cycle oil (HCO).

Both LCO and HCO may be hydrotreated for use as feedstock to other Hydroprocessing Units, or LCO may be yielded as product. The precise gasoline endpoint and boiling range of the naphtha and light and heavy cycle oils, is controlled to comply with the current product specifications. The bottom cut yields decant oil.

Also, Refinery slop oil is sometimes routed to the fractionator. The slop oil is fractionated into the proper cuts.

Stripping steam is used in the light gas oil stripper, the heavy gas oil stripper, and fractionator base.

Regenerator – Flue Gas Handling

The cracking reaction deposits coke on the catalyst. The deposits reduce the active surface area of the catalyst. Thus, it is necessary to regenerate the catalyst to restore its activity.

There are blowers which operate in parallel to supply air for the combustion of coke. These machines have sufficient capacity to permit operation of the units at reduced coke burning rate in the case of one of the blowers being out of service.

Most of the heat released by coke combustion is absorbed by the catalyst for transfer to the reactor.

The vapors leaving the regenerator, consisting of flue gas, air, and steam flow through cyclone separators and out of the vessel. The rising stream of gas will contain a small amount of entrained catalyst. As the gases flow through the cyclones, the major portion of the catalyst is removed from the gases. The hot gases leaving the regenerator flow through the flue gas coolers before being routed into the wet gas scrubbers.

The Wet Gas Scrubbers will reduce emissions of sulfur oxides, sulfuric acid and particulate matter before venting the flue gas to the atmosphere.

Separate drums are provided for the storage of fresh and used catalyst. Air from the blowers is used to transfer fresh or used catalyst from the drums to the unit. Makeup catalyst from the fresh catalyst drum is discharged into the regenerator by either plant air or aeration air. The catalyst dropout system is piped to empty the operating vessels into the used catalyst storage drum.

Cat Feed Hydrotreater Unit

The Hydrotreating Units are the Cat Feed Hydrotreater and the B-Light Cycle Oil Hydrotreater Units. The Cat Feed Hydrotreater (CFH) produces relatively high quality diesel fuel for sales. The CFH diesel meets Ultra-Low Sulfur Diesel (ULDS) specifications. To achieve this, the CFH removes metals, saturates bonds, and removes sulfur and other contaminants from the heavy oil feeds. The unit charge typically includes distillate gas oils from the CVEP, Coker I and II Units A, B, C Toppers and A, B, C FCC units. The unit also receives purchased makeup hydrogen. The hydro-treated product goes to the finished ULSD storage tanks.

Feed and Reactor

Entering the unit from storage, the gas oil feeds are heated via feed/effluent heat exchangers and mixed with makeup and recycle hydrogen from the furnace. After that, the oil is sent through the guard bed and the main reactor to remove contaminants from the reactor feed stream that could poison the catalyst. After exiting the guard bed, reactor and effluent exchanger train, the stream is sent to the separators.

Separators

After leaving the reactor, the effluent is cooled and it goes through a separation process. The material is separated and returned to the process or to the Fuel Gas Processing Unit (FGPU). The condensed water is drawn and sent to the sour water flash drum. The flash drum overhead is sent to FGPU and the liquid is routed to the sour water strippers.

Amine Treating

The purpose of the amine treating section is to remove H_2S and CO_2 from the recycle gas stream. The lean amine from central amine is cooled and filtered for particulate removal. In the amine contactor, recycle gas enters via the bottom and flows upward, counter-currently to the downward flowing amine. The rich amine exiting from the bottom of the contactor is flashed to remove any remaining hydrocarbon vapors and then sent back to central amine for acid gas stripping. The sweetened recycle gas from the top of the drum is sent to the recycle gas compressor.

Recycle Gas System

The hydrogen-rich stream is sent to the recycle gas compressor. The compressor discharge is divided into two streams. One stream is sent to the reactors to provide a quench. The other stream is mixed with the purchased makeup hydrogen stream. The make-up stream replaces the hydrogen that was consumed in the reactors. This make-up stream is compressed prior to being sent to the recycle stream. The combined stream is then heated by the furnace and sent to the front end of the unit to be combined with the gas oil feed.

Main Fractionator

The fractionator feed comes from the separators. The tower overhead is partially condensed and sent to the overhead accumulator. The vapor from this drum is compressed and sent to the FGPU. After the compressor stages, there is an interstage knock out drum, which removes hydrocarbon liquids and returns them to the naphtha product stream that leaves the unit for Feed Prep. Steam is used to strip hydrogen sulfide from the feed. The steam enters the fractionator at the bottom and through the diesel stripper. The steam is condensed into sour water in the overhead exchangers and separates in the overhead receiver. The sour water from the process is sent to the sour water flash drum.

The stripper bottoms are sent to product storage and sent on to either the cats as feed or to the FCCU storage tanks.

B-Light Cycle Oil Hydrotreater (BLCOH) Unit

BLCOH is a Hydrotreating Unit that can treat various cycle and blend oils. BLCOH can also operate as a Naphtha Hydrotreating Unit depending on refinery needs.

First, the hydrogen and feed are mixed and sent to a three-bed reactor. Additional quench hydrogen is added as required between the reactor beds.

Reacted feed is cooled in the feed-effluent and condensate is injected in the feed effluent to wash out any soluble salts. This sour water is removed and sent to the Sour Water Recovery Unit.

Hydrogen rich gas is mainly recycled, but some material is purged to fuel.

Liquid from the low-pressure separator is sent to the E-101 Stripper. The E-101 overhead gas is compressed in the JC-103A & B compressors and either recycled to the tower for pressure control or sent to amine treating and then to fuel. The overhead liquid is sent to the C4 Recovery F-11 drum for light ends fractionation. The stabilized product is sent to the clay filters at the Treating Plant and then on to turbine fuel storage tanks.

C-4 Recovery Unit

The main function of the C4 Gas Recovery Unit is to extract the valuable liquid components (C_3, C_4, C_5, and C_6+) from the various off gas streams generated by upstream units. The C4 Recovery is located downstream of the catalytic cracking units. The system is mainly composed of absorption and fractionation towers. The primary unit feeds are the FCC wet gas (C_3 and heavier components), cat gasoline, Coker tail gas, and Purge Treatment Unit (PFU) vent gas. Topper tail gas, Reformer Condensate and Straight Run gas can also be sent to C4 Recovery.

The gas streams entering the unit from the cats, Coker, and PFU are cooled, compressed, and condensed. The gas stream comes in contact with a cat gasoline stream, which begins the process of absorbing C_3's and heavier components from the gas stream into the gasoline. The stream then goes to the bottom of the absorber tower.

The FCCU distillate entering the unit is chilled by ammonia refrigerant and the chilled product is pumped to the top of the absorber tower.

The absorber tower is designed to remove C_3 and heavier material from the gas stream. A major portion of the C_3- and heavier components is absorbed from the gas stream into the product stream. The stripped gas is routed to fuel, while the bottom product stream is sent to the de-ethanizer tower.

The de-ethanizer tower is designed to remove C_2's and lighter material from the product. The feed stream is split in two. One is sent to the tower as cold feed and the other is sent to the tower as hot feed. The bottoms from the de-ethanizer tower are sent to the de-butanizer tower.

The de-butanizer tower is designed to remove C_4 and lighter material from the gasoline. The bottoms are sent as feed to the de-pentanizer tower. The overhead vapors are partially condensed and sent to a reflux drum. The vapor from the reflux drum is recycled back to the process. The liquid from the reflux drum is split into two streams. One stream is pumped back to the tower, while the other is pumped to the de-propanizer tower as feed.

The de-pentanizer tower separates the feed into a C_5 stream and a cat gasoline stream. The overhead from the tower is sent to a reflux drum. The liquid from the reflux drum is split into two flows. One flow is returned to the tower as reflux. The other stream is sent to the caustic treaters at the treating plant, and used as feed. The bottoms stream from the tower is sent as cat gasoline to the treating plant and the FCC Gasoline Hydrotreater before being routed to the gasoline blending.

The de-propanizer tower splits the feed into a C_3 mix stream and a C_4 stream. The overhead from the tower is condensed and collected in a reflux drum. Part of the liquid stream from this drum is sent back to the tower as reflux. The rest of the liquid is sent as C_3 mix to the Girbotol for amine treating and then to the PFU de-ethanizer, which removes light ends from the C_3 mix product stream. The bottoms stream from the tower are cooled and sent to the treating plant as feed.

The distillate splitter tower removes the light ends from the coker naphtha feed, and then the distillate is sent to the C-reformer. The overhead from the tower is condensed and sent to a reflux drum. Part of the liquid from the reflux drum is pumped back to the tower as reflux. The rest of the liquid is sent to the E-10, de-butanizer tower as feed. The bottoms stream from the tower, which is heavy coker naphtha, is sent to the C-reformer.

Propylene Fractionation Unit (PFU)

The C_3 mix feed to PFU is typically sold via pipeline. Some, however, is exported via ships and barges. The surplus mix is stored in a salt dome for later use to the refinery as feed or sold as product.

The C_3 mix feed stream is caustic washed to remove acid gases, then water washed to remove caustic. It is then fed to a de-ethanizer tower to remove C2's and lighter, which are returned to C4 Recovery. The de-ethanizer bottoms, PFU product is then sent to tankage consisting of 3 spheres and 7 bullets tanks for storage.

Fuel Gas Processing Unit (FGPU)

The FGPU is composed of two (2) units.

- FGPU-Fuel Gas Processing Unit
- LERU-Light Ends Recovery Unit

These two units operate similarly and are discussed together.

Typically, sulfur in hydrocarbon fractions is present as hydrogen sulfide (H_2S) and mercaptans. These sulfur compounds are present in the off-gas produced from several refinery units. Environmental regulations require removal of H_2S from the refinery fuel supply to comply with the Clean Air Act. Mainly, the C4 Gas Recovery Unit absorbs the gases produced at the various units including the hydrocarbons heavier than ethane. The ethane and lighter gases are sent to the refinery fuel stream which requires removal of H_2S. The H_2S in the sulfur rich stream not only is a pollutant when included in the fuel system but is also corrosive in the process heaters.

To remove the H_2S from the refinery gases, the sour fuel gas (containing H_2S) is contacted with an amine solution. This solution is used to absorb the H_2S from the fuel gas stream.

Next, the gas is routed through a low pressure knock out drum to prevent any liquid amine carry over. Finally, the gas is routed into the fuel system.

The rich amine solution is sent to the stripping tower at central Amine where the H_2S is removed. The lean amine (free of H_2S) is recycled back to the FGPU.

When the FGPU is taken out of service, it is spared with the LERU and Benzene-Amine. Consequently, the LERU is spared using the FGPU and Benzene-Amine.

Cat Gasoline Hydrotreater

CITGO produces a full boiling range Fluid Catalytic Cracking Gasoline stream, which is treated to reduce the sulfur content by approximately 92%.

The CGH consists of four (4) steps: feed preparation, reaction, hydrogen recycle and stabilizing. During feed preparation the gasoline feed is mixed with fresh and recycled hydrogen and preheated to reaction temperatures. The material undergoes desulfurization during the reaction process. The hydrogen is recycled back to the process by the recycle gas compressor for reuse. The stabilizing process receives the condensable material from the reaction process, which is sent to the product stripper for further processing. The stripper bottoms are then sent to intermediate storage before blending with the motor gasoline pool.

There are two (2) furnaces and one (1) reboilers associated with each CGH unit. The furnaces and reboilers are organized into an emission cap.

This permit:

- Incorporates the CGH units permitted under Permit 2810-V1;
- Reconciles all wet gas scrubber air emission sources to reflect Continuous Emissions Monitoring Data and stack test data;
- Incorporates requirements of the NSR Consent Decree to which CITGO LCMC became subject on January 27, 2005, for the Sulfur Dioxide emissions from the wet gas scrubbers;
- Removes a cap on the Hoppers with no emission changes;
- Adds three (3) new GC XVII activities;
- Removes the flare that is shared by both CGH units and serves as backup to the Conversion Optimization unit and Cat Feed Hydrotreater. Emission Source 3(XXXIV)10 B-104 Flare is permitted in Permit 3010-V0 (Site Services Area);
- Consolidates the fugitive emissions. Emission Source 3(XXXIV)17 CGH and Emission Source 3(MISC)2 Cat Area Fugitives; and
- Removes tank 70 which is included in Permit 2796-V4 (Logistics Area) as Tank 42.

Estimated emissions in tons per year are as follows:

Pollutant	Before	After	Change
PM_{10}	483.25	482.05	-1.20
SO_2	4549.13	426.68	-4122.45
NO_x	1586.91	3331.61	+1744.70*
CO	630.12	616.81	-13.31
VOC	795.26	803.41	+8.15

*NO_x emission increase comes from Continuous Emissions Monitoring (CEM) Data.

Prevention of Significant Deterioration Applicability

The CITGO LCMC is a listed source category of the PSD regulations and it has the potential to emit greater than 100 tons per year (tpy) of a PSD regulated air pollutant (i.e., NO_x, SO_2, CO, VOC, etc). As a result, the site is considered an existing major source of these pollutants. The results of the PSD analysis conducted by CITGO show that none of the respective criteria pollutants exceed their limits.

MACT requirements

The facility meets MACT requirement by complying with the Louisiana Refinery MACT Determination through the Louisiana Fugitive Emission Consolidation program for the project fugitives. The CAT Area will comply with the appropriate MACT requirements.

Air Modeling Analysis

No modification of the facilities is proposed with this Part 70 permit application. Facility-wide Louisiana Toxic Air Pollutant (LTAP) dispersion modeling is required for applicable LTAP compounds with emissions above the Minimum Emission Rate for the CAT Area. No modeling submission with the Air Toxics Compliance Plan is required under LAC 33:III.Chapter 51.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to Section VIII of the draft Part 70 permit.

Insignificant Activities

There are no insignificant activities associated with this unit.

IV. Regulatory Analysis

The applicability of the appropriate regulations is straightforward and provided in the Facility Specific Requirements Section of the draft permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms conditions and standards are provided in the Facility Specific Requirements Section of the draft permit.

Groundwater
CITGO has prepared and submitted a Groundwater Certification Work Plan for LDEQ approval. Once approved, the activities outlined in the work plan will be implemented and a formal report of the assessment findings will be submitted to LDEQ.

Wetlands
This permit does not include any impacted wetlands.

V. Permit Shields

Annual Reporting
Semi-annual reporting periods required by 40 CFR Part 63 Subpart G (HON) and 40 CFR Part 63 Subpart CC (RMACT) will be on a calendar basis (January 1 through June 30 and July 1 through December 31) for consistency with the Title V reporting schedule.

VI. Periodic Monitoring

The Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are provided in the Facility Specific Requirements Section of the proposed permit.

VII. Applicability and Exemptions of Selected Subject Items

See Permit.

VIII. Streamlined Requirements

Unit or Plant Site	Programs Being Consolidated	Stream Applicability	Overall Most Significant Program
FCCU Unit	LAC 33:III.2122, LA Fugitive Emission Control LAC 33:III.Chapter 51, LA MACT for Refineries 40 CFR 63, Subpart CC, NESHAP Petroleum Refineries	≥ 10% VOC ≥ 5% VOTAP (Class I and II) ≥ 5% Organic HAP	LA MACT for Refineries
BLCOH	LAC 33:III.2122, LA Fugitive Emission Control LAC 33:III.Chapter 51, LA MACT for Refineries 40 CFR 63, Subpart CC, NESHAP Petroleum Refineries	≥ 10% VOC ≥ 5% VOTAP (Class I and II) ≥ 5% Organic HAP	LA MACT for Refineries
C-4 Recovery Unit	LAC 33:III.2122, LA Fugitive Emission Control LAC 33:III.Chapter 51, LA MACT for Refineries 40 CFR 60 Subpart GGG, NSPS Petroleum Refineries Equipment Leaks 40 CFR 63, Subpart CC, NESHAP Petroleum Refineries	≥ 10% VOC ≥ 5% VOTAP (Class I and II) ≥ 10% VOC ≥ 5% Organic HAP	LA MACT for Refineries
PFU	LAC 33:III.2122, LA Fugitive Emission Control 40 CFR 60 Subpart GGG, NSPS Petroleum Refineries Equipment Leaks	≥ 10% VOC ≥ 10% VOC	LAC 33:III.2122
FGPU/LERU	LAC 33:III.2122, LA Fugitive Emission Control	≥ 10% VOC	LAC 33:III.2122

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Unit or Plant Site	Programs Being Consolidated	Stream Applicability	Overall Most Significant Program
CFH Unit	LAC 33:III.2122, LA Fugitive Emission Control LAC 33:III.Chapter 51, LA MACT for Refineries 40 CFR 63, Subpart CC, NESHAP Petroleum Refineries	≥ 10% VOC ≥ 5% VOTAP (Class I and II) ≥ 5% Organic HAP	LA MACT for Refineries

IX. Glossary

Best Available Control Technologies (BACT) - An emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under this part which would be emitted from any proposed major stationary source or major modification which the administrative authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

Carbon Monoxide (CO) – A colorless, odorless gas which is an oxide of carbon.

Grandfathered Status- Those facilities that were under actual construction or operation as of June 19, 1969, the signature date of the original Clean Air Act. These facilities are not required to obtain a permit. Facilities that are subject to Part 70 (Title V) requirements lose grandfathered status and must apply for a permit.

Hydrogen Sulfide (H_2S) - A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the action of acids on metallic sulfides, and is an important chemical reagent.

Maximum Achievable Control Technology (MACT) - The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

New Source Review (NSR) - A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

Nitrogen Oxides (NO_x) - Compounds whose molecules consists of nitrogen and oxygen.

Nonattainment New Source Review (NNSR) - A New Source Review permitting program for major sources in geographic areas that do not meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. Nonattainment NSR is designed to ensure that emissions associated with new or modified sources will be regulated with the goal of improving ambient air quality.

Organic Compound - Any compound of carbon and another element. Examples: Methane (CH_4), Ethane (C_2H_6), Carbon Disulfide (CS_2)

Part 70 Operating Permit- Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: $\geq$ 10 tons per year of any toxic air pollutant; $\geq$ 25 tons of total toxic air pollutants; and $\geq$ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year of NO_x or VOC for sources in non-attainment parishes).

PM_{10}- Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) - The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO_2) – An oxide of sulfur.

Title V permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) - Any organic compound which participates in atmospheric photochemical reactions; that is, any organic compound other than those which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.